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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,869	10/02/2003	Brian K. Fuller	DP-307055	9840

22851 7590 02/04/2005

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EXAMINER	
BAREFORD, KATHERINE A	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/677,869	**Applicant(s)** FULLER ET AL.	
	Examiner Katherine A. Bareford	**Art Unit** 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/03, 5/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims

1. The Examiner understands "kinetically sprayed" surface or coatings as used in the claims to be a coating or surface sprayed by a process as described in paragraph [0016] of the specification and as further described in paragraphs [0003] – [0006] of the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4, 6, 7, 9-11, 14, 15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Fuller et al (US 6743468)

The applied reference has a common inventor (Brian K. Fuller) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim 1: Fuller teaches a method of repairing a defect in a kinetically sprayed surface. Column 7, lines 35-65. A kinetically sprayed surface having a defect in the surface is provided. Column 7, lines 55-60. A repair coating is applied to the defect by thermally spraying a molten material on the defect. Column 7, lines 5-15 and 55-65. This thermal spray coating fills and repairs the defect. Column 7, lines 55-60.

Claim 2, 11: the molten material is formed from the same material as the kinetically sprayed surface. Column 7, lines 35-65 (as the gun is just oscillated from one spray type to the other).

Claim 4, 10: an additional kinetically sprayed coating can be applied over the thermally sprayed once molten material. Column 7, lines 55-65.

Claim 6, 14: the defect can comprise at least one conical defect. Column 7, lines 49-45.

Claim 7, 15: the molten material can be a metal or alloy. Column 6, line 60 through column 7, line 5.

Claim 9, 17: the thermal spray process can include a plasma gas thermal spray process. Column 7, lines 20-35.

4. Claims 1, 2 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Brogan (US 2002/0110682).

Claim 1: Brogan teaches a method of repairing a defect in a surface which can be a kinetically sprayed surface. Paragraphs [0029] and [0069]—[0070]. A possibly kinetically sprayed surface having a defect in the surface is provided. Paragraphs [0029] and [0069]—[0070] (the initial surface can be applied by kinetic spraying (cold gas dynamic spraying is another term for kinetic spraying – note paragraph [0003] of the specification)). A repair coating is applied to the defect by a process that can be thermally spraying a molten material on the defect. Paragraphs [0029]—[0030] and [0069]—[0070] (the repair coating can be applied by a process such as plasma spraying or flame spraying which would melt the particles). This thermal spray coating fills and repairs the defect. Paragraphs [0029] and [0069]—[0070].

Claim 2 : the molten material is formed from the same material as the kinetically sprayed surface. Paragraphs [0069]—[0070] (since the surface is restored).

Claims 7, 8 : the molten material can contain a metal, copper. Paragraph [0051] (copper can be in the coating).

Claim 9 : the thermal spray process can include a flame spray process, etc. Paragraph [0029].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3 and 12 rejected under 35 U.S.C. 103(a) as being obvious over Fuller et al (US 6743468).

The applied reference has a common inventor (Brian K. Fuller) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Fuller teaches all the features of these claims, as discussed in the 35 USC 102(e) rejection using Fuller above, except using a molten material that has a different material composition from the kinetically sprayed surface.

However, Fuller teaches that various different materials and different material compositions can be used by using multiple tubes. See column 7, lines 1-6. Fuller, further teaches that by using the multiple tubes one can rapidly change particles from a first to second set by simply using different tubes. Column 5, lines 25-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fuller to use different materials at when thermally and kinetically spraying so as to provide variable application of materials, because Fuller teaches that one can rapidly switch between different sets of particles during the spraying and that one can oscillate between kinetic and thermal spraying, thus indicating that one can also switch types of particles when performing different types of spraying if such is desired.

8. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller as applied to claims 1 above, and further in view of the admitted state of the prior art.

Note the information as to common inventorship as discussed in paragraph 7 above.

WB

Fuller teaches all the features of these claims, as discussed in the 35USC 102(e) rejection using Fuller above, except that the kinetically sprayed surface has a thickness of at least 5 mm.

However, the admitted state of the prior art, at paragraph [0007] of the specification teaches that it is well known to provide kinetically sprayed coating layers of 5 mm or more, and that such layers develop defects.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fuller to provide initial kinetically sprayed layers of 5 mm or more as suggested by the admitted state of the prior art so as to provide repair of such layers, because Fuller teaches that after kinetic spraying one can switch to thermal spraying to repair defects in an applied kinetic sprayed coating, and the admitted state of the prior art teaches that it is well known to apply kinetic spray coatings of 5 mm or more and that such layers commonly develop defects.

9. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller as applied to claims 1 above, and further in view of the Van Steenkiste et al (US 6139913).

WB > note the information as to common inventorship as disussed in paragraph 7 above.

Fuller teaches all the features of these claims, as discussed in the 35USC 102(e) rejection using Fuller above, except that the molten material is a nickel or copper alloy. Fuller does teach spraying metals or alloys. Column 6, line 60 through column 7, line 5.

However, Van Steenkiste teaches that when performing kinetic spraying, it is well known to spray metals such as aluminum, copper or iron. Column 5, lines 15-25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fuller to provide spraying a copper alloy as suggested by Van Steekiste so as to provide a desirable coating, because Fuller teaches spraying metals or alloys using a system with switching between kinetic spraying and thermal spraying, and Van Steenkiste teaches that it is well known to apply kinetic spray coatings containing copper or other metals, thus indicating that copper alloys would be an expected metal alloy to use for thermal/kinetic spraying systems.

10. Claims 3, 4, 6, 10-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brogan (US 2002/0110682).

Brogan teaches all the features of these claims, as discussed in the 35 USC 102(b) rejection using Brogan above, except (1) the use of different material (claims 3, 12), (2) the additional kinetically sprayed coating (claims 4, 10, 11, 15-17), (3) the conical defect (claims 6, 14).

However, Brogan does teach repairing a defect in a surface which can be a kinetically sprayed surface. Paragraphs [0029] and [0069]—[0070]. A possibly kinetically sprayed surface having a defect in the surface is provided. Paragraphs [0029] and [0069]—[0070] (the initial surface can be applied by kinetic spraying (cold gas dynamic spraying is another term for kinetic spraying – note paragraph [0003] of the specification). A repair coating is applied to the defect by a process that can be thermally spraying a molten material on the defect. Paragraphs [0029]—[0030] and [0069]—[0070] (the repair coating can be applied by a process such as plasma spraying or flame spraying which would melt the particles, since various application processes can be used). This thermal spray coating fills and repairs the defect. Paragraphs [0029] and [0069]—[0070].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brogan to use different materials for repair with an expectation of desirable coating results, because the polymer/aggregate mixture is sprayed to repair the coating, and Brogan teaches a variety of such materials that can be used (see paragraphs [0044]—[0051]), and thus one of ordinary skill in the art would perform routine experimentation to optimize the materials used from the selection given. It would further have been obvious to modify Brogan to further apply an additional kinetically sprayed coating to provide further repair of the coating, because the coating would, in time, need to be repaired again after the first repair, due to reuse and rewear occurring, and since Brogan teaches a repair method, one of ordinary skill in the art would be suggested to use the repair method of Brogan again, and Brogan teaches that one of the methods that can be used for repair is kinetic spraying. It would further have been obvious to modify Brogan to repair a conical defect with an expectation of providing a desirably repaired coating, because Brogan teaches to repair a worn down and defective coating in general by recoating and conical defects in the coating would be included in the general possible defects.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:30-4:00) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kath B

KATHERINE BAREFORD
PRIMARY EXAMINER